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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/617,842	07/14/2003	Masaru Asari	107355-00080	7984
7590	07/16/2004		EXAMINER	
AREN'T FOX KINTNER PLOTKIN & KAHN, PLLC Suite 400 1050 Connecticut Avenue, N.W. Washington, DC 20036-5339			CHANG, CHING	
			ART UNIT	PAPER NUMBER
			3748	

DATE MAILED: 07/16/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	10/617,842	ASARI ET AL.
	Examiner Ching Chang	Art Unit 3748

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on _____.
 2a) This action is **FINAL**. 2b) This action is non-final.
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1-24 is/are pending in the application.
 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
 5) Claim(s) 2,3,5 and 6 is/are allowed.
 6) Claim(s) 1 and 4 is/are rejected.
 7) Claim(s) 7-24 is/are objected to.
 8) Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.
 10) The drawing(s) filed on ____ is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) Notice of References Cited (PTO-892)
 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
 Paper No(s)/Mail Date 07/14/2003.

4) Interview Summary (PTO-413)
 Paper No(s)/Mail Date. _____.
 5) Notice of Informal Patent Application (PTO-152)
 6) Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. ***Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Asanomi (US Patent No. 4,674,4542).***

Asanomi discloses an engine (1) comprising: a first camshaft (10B) having a power input portion (15, 12) at one end thereof; a second camshaft (10A) interlocked and connected with the first camshaft one end portion thereof, the first and second are parallel each other (see Fig. 2) and are rotatably supported on a cylinder head (8); a driven gear (23) meshing with a drive gear (24) provided at the end portion of one of the first and second camshafts; and an auxiliary device drive shaft (of 16) connected to an auxiliary device (16) mounted on an engine main body including the cylinder head, wherein an axis disposed between the first and second camshafts at a position being closer to the cylinder head than a straight line connecting the axes of the two camshafts (See Fig. 1).

3. ***Claims 1 and 4 are rejected under 35 U.S.C. 102(b) as being anticipated by Hirose et al. (US Patent No. 5,181,485).***

Hirose discloses an engine (1) comprising: a first camshaft (5) having a power input portion (9) at one end thereof; a second camshaft (6) interlocked and connected with the first camshaft one end portion thereof, the first and second are parallel each other (see Fig. 2) and are rotatably supported on a cylinder head (3, 4); a driven gear (13) meshing with a drive gear (12) provided at the end portion of one of the first and second camshafts; and an auxiliary device drive shaft (of 11a-11d) connected to an auxiliary device (11a-11d) mounted on an engine main body including the cylinder head, wherein an axis disposed between the first and second camshafts at a position being closer to the cylinder head than a straight line connecting the axes of the two camshafts (See Fig. 1); wherein helical gears meshing (12, 13) with each other are provided at the one end portions of the first and second camshafts, and wherein a thrust generated in the camshaft of the two camshafts on which the drive gear is provided by virtue of the meshing engagement of the helical gears so provided and a thrust generated in the camshaft on which the drive gear is provided by virtue of the meshing engagement of the drive gear and the driven gear which are both helical gears are set to be exerted opposite directions to each other (See Abstract; Col. 5, line 9 through Col. 8, line 66) .

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. ***Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Asanomi (as applied to claim 1 above) in view of Makihara (JP '234).***

Asanomi discloses the invention as recited above, however, fails to disclose helical gears meshing being provided and a thrust being generated at the one end portions of the said camshafts.

The patent to Makihara on the other hand, teaches that it is conventional in the art of a camshaft thrust bearing, to utilize a pair of helical gears 3 to interlock and orient camshafts (1, 2) in a thrust direction.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have utilized the helical gears meshing as taught by Makihara in the Asanomi device, since the use thereof would provide an improved interlocked connection between camshafts.

Allowable Subject Matter

6. Claims 2-3, and 5-6 are allowed.

7. Claims 7-24 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Nakatani et al. (US Patent 4,957,079).
- Asano et al. (US Patent 4,671,223).
- Jackson (US Patent 3,732,745).

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ching Chang whose telephone number is (703)306-3478. The examiner can normally be reached on M-Th, 7:00 AM -5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas Denion can be reached on (703)308-2623. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Patent Examiner



Ching Chang



Thomas Denion
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 3700